

Redispatch and Curtailment Procedures, Version 10

Effective: 11/01/14

This Business Practice describes the Redispatch and Curtailment Procedures used to mitigate transmission system overloads and other reliability-related problems.

Version 10 reflects revisions associated with BPA's implementation of 15-minute scheduling. The primary revisions are: the substitution of the term "managed path" for "Flowgate" for clarity (managed path includes network flowgate, network path, and intertie); the substitution of the term "interval" for "hour"; the substitution of the term "within-interval" for "in-hour"; the substitution of the term "future-interval" for "prior-to-the-hour"; and the removal of the distinction between North of Echo Lake and the other managed paths.

A. General Requirements & Procedures

1. Curtailment or Redispatch orders are initiated by BPA Transmission Services when:
 - a. Power flows are nearing or exceeding the established System Operating Limit (SOL) for a managed path (within-interval Curtailment);
 - b. The forecasted flows or total schedules exceed the SOL for a managed path for future intervals (future-interval Curtailment); or
 - c. BPA Transmission Services determines that an emergency or unforeseen condition impairs or degrades, or threatens to impair or degrade, the reliability of the Transmission System.
2. BPA Transmission Services uses the following methods to reduce flow (in order of precedence):
 - a. Switching actions (impedance changes) as defined in the relevant Dispatcher Standing Order (DSO).
 - b. Discretionary Redispatch pursuant to Attachment M of the OATT may be requested from BPA Power Services (BPA-PS).
 - c. Curtailment Calculator, which determines e-Tag reductions for managed paths according to NERC curtailment priority and may include redispatch for Network Loads. Such redispatch includes NT Firm Redispatch pursuant to Attachment M of the OATT, and may include redispatch requested from Network Customers to effectively relieve congestion on the managed path.
 - d. Emergency Redispatch from BPA-PS pursuant to Attachment M of the OATT.
3. Generating facilities that are unable to modify operation due to a *force majeure* when given a Reliability Order must immediately notify BPA Transmission Services' Dispatch by phone.
4. All generating facilities interconnected to or taking transmission service from BPA Transmission Services are subject to the Failure to Comply Penalty¹.

B. Redispatch Procedures

1. BPA Transmission Services can request Redispatch, pursuant to Attachment M of BPA's Tariff, prior to Curtailment of any Firm or Non-Firm e-Tags to avoid the Curtailment.

¹ The consequences of non-compliance are defined in the Failure to Comply Business Practice in effect at that time.

This can include Discretionary Redispatch or Redispatch from resources other than the federal hydro system. Redispatch will be requested by a phone call from BPA Transmission Services' Dispatcher (Dispatcher).

2. In all cases, the generation estimate used for Generation Imbalance calculations will be adjusted by BPA to reflect the Redispatch order.
3. Redispatch will not result in changes to the original e-Tags.
4. There are currently three types of Redispatch under Attachment M of the OATT:
 - a. Discretionary Redispatch
 - i. BPA Transmission Services may request Redispatch from BPA-PS prior to curtailing any firm or non-firm PTP e-Tags or secondary NT e-Tags in order to avoid or reduce curtailments.
 - ii. The Dispatcher will request Discretionary Redispatch from BPA-PS by phone call.
 - iii. BPA-PS may decline to provide Discretionary Redispatch.
 - b. NT Firm Redispatch
 - i. BPA Transmission Services can order NT Firm Redispatch from BPA-PS to avoid or reduce curtailment Firm NT e-tags. This would happen only after BPA Transmission Services has Curtailed Non-Firm PTP e-Tags and secondary NT e-tags in a sequence consistent with the NERC Curtailment priority.
 - ii. The Dispatcher will order NT Firm Redispatch from BPA-PS by phone call specifying that the purpose is for NT Firm Redispatch. BPA-PS must provide NT Firm Redispatch to the extent that it can do so without violating non-power constraints.
 - c. Emergency Redispatch
 - i. BPA Transmission Services can call on Emergency Redispatch from BPA-PS when it declares a transmission system emergency. BPA-PS must provide Emergency Redispatch.

C. Curtailment Procedures

1. In addition to BPA Transmission Services' Redispatch Order, Customers must follow any subsequent Reliability Orders, such as Curtailments.
2. BPA Transmission Services will communicate Curtailments via the e-Tag.
 - a. BPA Transmission Services will use the Curtailment Calculator to determine which e-Tags will be curtailed for all managed paths. For managed paths within the BPA network, e-Tags with impacts greater than 10% on the managed path will be considered for Curtailment.
 - b. The generator indicated on the e-Tag must modify its operations appropriately.
 - c. For generating facilities that do not monitor e-Tags, the Purchasing Selling Entity (PSE) listed on the e-Tag is responsible to inform the generator of the necessary actions to take.
 - d. For within-interval Curtailments, generating facilities must move to the new schedule within 10 minutes following the e-Tag Curtailment. For future-interval Curtailments, generating facilities must move to the new schedule during the normal ramp for the affected interval.
 - e. Load Serving Entities (LSE) must re-supply generation from sources that will not further aggravate the constrained managed path or shed load in response to curtailed e-Tags.
3. E-Tag Curtailments initiated by other Reliability Entities and approved by BPA Transmission Services are Reliability Orders to generating facilities, loads and Customers within the BPA Balancing Authority Area.

4. BPA Transmission Services will curtail all Non-Firm PTP and NT schedules according to NERC Curtailment priority (1-NS, 2-NH, 3ND, 4NW, 5NM, 6-NN (including 6-CF), and 7-F) on a pro-rata basis within each priority.
5. For all Curtailments, BPA Transmission Services will curtail 7-F schedules and order generating facilities that have an obligation to redispatch at the request of BPA Transmission Services under Attachment M of the OATT to provide NT Firm Redispatch on a pro-rata basis if the overload persists. BPA Transmission Services will curtail 7-F in proportion to the 7-F flow on the affected managed path and request NT Firm Redispatch in proportion to the 7-FN and unscheduled Firm NT flow on the affected managed path.
6. If a generator within the BPA Balancing Authority Area is operating at its minimum generation level within the interval, and e-Tag Curtailments occur within that interval, the generator shall move completely offline, even if the Curtailment is relatively small in proportion to the generation for that interval.
7. A generator that does not respond appropriately to a Curtailment is subject to a Failure to Comply Penalty.²
8. A generator that has received Operating Reserves from BPA Transmission Services but has not recovered sufficient generation to meet schedules following the expiration of the reserves must reduce e-Tags or re-supply the schedules for the succeeding intervals. If the generator or PSE is unable to reduce or re-supply schedules to match the reported generation estimate, BPA Transmission Services will, at Customer request, curtail e-Tags to match the reported generation estimate.
9. System emergencies or other unforeseen conditions may require Dispatchers to deviate from the pro-rata Curtailment principles in order to maintain reliability.
 - a. In those circumstances, BPA Transmission Services will coordinate schedule changes or generation changes as necessary in order to maintain system reliability (situation specific).
 - b. Such non-pro-rata Curtailments should last no more than two hours after the start of the event. If necessary, pro-rata Curtailments will be used beyond that time.

D. Circulation Procedure for the California Oregon Intertie (COI) and the Pacific DC Intertie (PDCI)

1. When power flows on the COI are nearing or exceeding SOL, BPA Transmission Services and the California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP) and WECC Reliability Coordinator (RC) may arrange to circulate power on the PDCI to lower power flows on the COI. Customers and/or other firm transmission rights holders will not be notified of circulation.
 - a. BPA Transmission Services and CAISO will not curtail any e-Tags if the circulation reduces flows on the COI below SOL.
 - b. In the event that circulation is not available (or not effective) and power flows remain above SOL limits on the COI, curtailments will occur.
2. When power flows on the PDCI are nearing or exceeding SOL, BPA Transmission Services and the California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP) and WECC Reliability Coordinator (RC) may arrange to circulate power on the COI to lower power flows on the PDCI. Customers and/or other firm transmission rights holders will not be notified of circulation.

² The consequences of non-compliance are defined in the Failure to Comply Business Practice in effect at that time.

- a. BPA Transmission Services and LADWP will not curtail any e-Tags if the circulation reduces flows on the PDCI below SOL.
- b. In the event that circulation is not available (or not effective) and power flows remain above SOL limits on the PDCI, curtailments will occur.
- c. If the power flows are in a north to south direction, LADWP will initiate the curtailments.
- d. If the power flows are in a south to north direction, BPA Transmission Services will initiate the curtailments.

E. Additional Information

Policy References

- [OATT](#): Sections 13, 14, 16, 17, 18, 19, 22, 29, Attachment M
- NERC Reliability Standard, TOP-001-1
- WECC Minimum Operating Reliability Criteria (MORC): Section 3.B.1
- NERC e-Tag timing specification
- [Transmission & Ancillary Service Rate Schedules](#): Section II, B

Related Business Practices

- Requesting Transmission Service
- Scheduling Transmission Service
- Generation Imbalance Service
- Operating Reserves
- Failure to Comply

Version History

Version 10	<p>10/01/2014 Version 10 reflects revisions associated with BPA's implementation of 15-minute scheduling. The primary revisions are: the substitution of the term "managed path" for "Flowgate" for clarity (managed path includes network flowgate, network path, and intertie); the substitution of the term "interval" for "hour"; and the removal of the distinction between North of Echo Lake and the other managed paths. Specific material changes include:</p> <p>Section A</p> <ul style="list-style-type: none"> • Step 1.a: Replaced "Flowgate" with "managed path (within-interval Curtailment)" • Step 1.b: Replaced "When forecasted flow for the next hour exceeds the forecasted SOL for the next hour over the North of Echno Lake Flowgate" with "The forecasted flows or total schedules exceed the SOL for a managed path for future intervals (future interval Curtailment)" • Step 1.c: Deleted "In response to Curtailments initiated in other Balancing Authorities" • Step 2.c: Deleted "Network"; deleted "energy profile;" replaced "Network Flowgates" with "managed paths;" added "to effectively relieve congestion on the managed path" • Step 4: Deleted "All Custoemrs that submit schedules must submit e-Tags that meet scheduling requirements and submit Generation Estimates consistent with those"
------------	---

	<p>requirements” because this requirement is covered in other Business Practices</p> <p>Section C</p> <ul style="list-style-type: none"> • Step 2.a: Deleted “For in-hour Curtailments, and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate;” deleted “Network;” replaced “cut” with “curtailed;” replaced “an Internal Flowgate and will use the Intertie Curtailment Tool to determine which e-Tags will be cut for an intertie” with “all managed paths;” replaced “internal Flowgates” with “managed paths within the BPA network;” replaced “Flowgate being managed” with “managed path” • Step 2.d: Replaced “in-hour” with “within-interval;” replace “prior-to-the-hour” with “future-interval;” deleted “on North of Echo Lake;” replaced “hourly ramp” with “ramp for the affected interval” • Step 2.e: Added “from sources that will not further aggravate the constrained managed path” • Step 4: Deleted “For in-hour Curtailments, and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate;” replaced “using e-Tags” with “within each priority” • Step 5: Replaced “in-hour Curtailments, and for prior-to-the-hour Curtailments on North of Echo Lake” with “all Curtailments;” replaced “flowgate” with “managed path” • Step 6: Replaced “Operating Hour” with “interval” • Step 7: Replaced “reduce is subject to BPA Transmission Services' Failure to Comply Penalty, as provided in Section II.B of the General Rate Schedule Provisions” with “that does not respond appropriately to a Curtailment is subject to a Failure to Comply Penalty” • Step 8: Added “e-Tags;” replaced “hours” with “interval” <p>Section D</p> <ul style="list-style-type: none"> • Step 1.a: Replaced “OTC” with “SOL” • Step 1.b: Replaced “OTC” with “SOL” • Step 2.a: Replaced “COI” with “PCDI;” replaced “OTC” with “SOL” • Step 2.b: Replaced “OTC” with “SOL” <p>Section E</p> <ul style="list-style-type: none"> • Bulletin: deleted reference to Circulation & Counter Schedule Procedures for AC/DC Interties (this information is contained in Section D) • Policy References, Transmission & Ancillary Service Rate Schedules: Deleted “and Section 111.B” • Related Business Practices: Added “Failure to Comply”
Version 9	05/21/13 Version 9 incorporates in Section D the Circulation Procedure for the California Oregon Intertie (COI) and the Pacific DC Intertie (PCDI) Bulletin. The bulletin content has been rewritten to reflect current policy and procedures.
Version 8	<p>02/13/13 Version 8 incorporates throughout the document prior-to-the-hour Curtailment procedures for the North of Echo Lake S>N Flowgate and clarifies that the request of Discretionary Redispatch by BPA Transmission Services is a discretionary action. Specific changes include:</p> <p>Section A</p> <ul style="list-style-type: none"> • Step 1.a: Replaced "Operating Transfer Capability (OTC)" with "System Operating Limit (SOL)"

	<ul style="list-style-type: none"> Added step 1.b Step 2.b: Deleted 'Power Services' and added "maybe requested from BPA-PS" <p>Section B</p> <ul style="list-style-type: none"> Step B.1: Replaced "order" with "request"; added "pursuant to Attachment M of BPA's Tariff"; and deleted "Point-to-Point (PTP) and "(or secondary network (NT) e-Tags)" Step B.2: Replaced "order" with "request" Step B.4.a.i: Added "or reduce" and deleted "any" Added step B.4.a.iii Step B.4.b.i: Deleted "Power Services" and "maintain" and added "avoid or reduce curtailment" and "This would happen only" Step B.4.b.ii: Added "NT Firm" and "BPA-PS must provide NT Firm Redispatch to the extent that it can do so without violating non-power constraints." Step B.4.c.i: Added "from BPA-PS", "transmission" and "BPA-PS must provide Emergency Redispatch." <p>Section C</p> <ul style="list-style-type: none"> Step C.2.a: Added "and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate" and "will use" Step C.2.c: Replaced "who" with "that" Step C.2.d: Added "For in-hour Curtailments" and "For prior-to-the-hour Curtailments on North of Echo Lake, generating facilities must move to the new schedule during the normal hourly ramp." Step C.4 and C.5: Added "and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate" Step C.6: Replaced "load" with "generation" Step C.8: Added "or re-supply"
Version 7	Version 7 was out for comment through December 31, 2012. Version 8 was out for comment and the final updates posted before the responses to Version 7 were completed.
Version 6	10/19/12 Version 6 clarifies in step C.2.a the level of Flowgate impacts an e-Tag must have to be considered for Curtailment.
Version 5	09/14/12 Version 5 adds "3ND, 4NW, 5NM" and "For in-hour curtailments" to step C.4 and "For in-hour curtailments" to step C.5.
Version 4	12/02/10 Version 4 of this business practice includes the following changes: • Step 3.4: Added "that submit schedules". • Step 5.5: Replaced Firm PTP with 7-F, replaced Firm NT with 7-FN, added "and unscheduled Firm NT" and deleted "Pursuant to Attachment M of the OATT".
Version 3	01/28/10 The purpose of this revision is to include language on Discretionary Dispatch and eliminate outdated information on the Reliability Redispatch Pilot. This is an extensive revision to Version 2 of this business practice. Therefore, Transmission Services has not displayed the edits.
Version 2	07/17/09 The purpose of this revision is to add language reflecting the current automation and scheduling procedures, North American Electric Reliability Council (NERC) Reliability Standards, the Failure to Comply Penalty, and incorporate the Communication of Curtailments Bulletin, posted September 9, 2008.

Version 1	08/17/01 Revision dated August 17, 2001: The purpose of the revision to Redispatch and Curtailment Procedures business practice is to delete section A.3 and section A.4 because the requirements are specified in the Reservation and Scheduling Procedures business practice and in contradiction with what is stated in the Load and Resource Forecast business practice.
-----------	--